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ABSTRACT

Two longitudinal studies examine the consequences of congruency-incongruency for college students. Interviews were used to obtain their attitudes toward a number of issues as well as their perception of the attitudes of other undergraduates. Results from the 1971-1973 panel indicate that congruency is causally prior to agreement and that incongruency leads to opinion seeking and opinion giving. Congruency is also related to high levels of media use, increased political activity, non-Republican party affiliation, and movement toward the dominant political values on campus. Results from the 1973-1975 panel show a curvilinear relationship between incongruency and newspaper public affairs use, peer discussion, political label, and political interest; this is, in part, the result of confounding between incongruency and other variables related to change. The contingent variables, expectation to change and political label, produce changes in the strength and direction of relationships between incongruency and the dependent variables. (Author/AA)

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CAUSAL ANALYSIS OF COORIENTATION VARIABLES USING A NON-EXPERIMENTAL, LONGITUDINAL DESIGN

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CAUSAL ANALYSIS OF COORIENTATION VARIABLES USING A NON-EXPERIMENTAL, LONGITUDINAL DESIGN

Since the introduction of a coorientational approach to the study of human communication (Chaffee and McLeod, 1968; Chaffee, McLeod and Guerrero, 1969; and McLeod and Chaffee, 1973) the model has gained wide acceptance. It has been applied, for example, to the study of family interactions by O'Keefe (1973), community reactions to divisive issues by Tichenor and Wackman (1973), campus-community relations by Stamm, Bowes and Bowes (1973), and legislator-constituent interactions by Hesse and Chaffee (1973). The findings from these and other studies seem to argue that the model is an important addition to the field.

CONCEPTUAL AND OPERATIONAL MODELS

As McLeod and Chaffee (1973) have noted, however, the coorientation model is really two models, one conceptual and the other operational, stemming from a common strategy for the study of communicative interaction. Postulates of the strategy include the desirability of employing interpersonal units of analysis versus intrapersonal ones, studying change in the cognitive states of the persons over time rather than static relationships, and locating settings in which there is simultaneous orientation on the part of the individuals involved to an object or set of objects that serve as the focus or topic of communication. The conceptual model consists of general definitional statements regarding the relationships between persons in a communication situation. The measurement model specifies a number of operationalizations which provide basic data on some products of the coorientation strategy.

The research to date has advanced the level of knowledge regarding the operational model, providing, as noted, support for its application to a variety of communication problems. To some extent, the research also has provided guidelines for improving the measurement in the future (Wackman, 1969; McLeod, Becker and Elliott, 1972). But the literature has only indirectly advanced the understanding of the potential of the conceptual model. There remains little basis on which to construct a coorientational theory

The theoretical shortcomings are most notable when conceptual definitions are examined. While research has generally employed at least three products of the measurement model presented in Figure 1, these are almost always defined nominally. Other than the terms, Agreement, Congruency and Accuracy, the readers are provided little to guide them in understanding the underlying concept. As Tipton (1971) has noted, these terms are common ones in diverse literatures, and they do not mean the same thing to all reader

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Figure 1 about here

One of the primary difficulties in beginning to make distinctions between the three measures and develop a rationale for interrelationships is that the three measures are statistically dependent. Since each of the measures shares some measurement element in common with at least one other, it is not possible with a simple static design to determine order or nature of relationships. Multiple operationalism and/or longitudinal designs are needed to avoid the pitfalls of positing crucial relationships which cannot be tested.

In part because of this problem, the three measures have often been treated as equivalent. The most common approach has been to use them as criterion variables in studying the communication process. These studies have shown, in general, that there are a number of social and environmental constraints which interact with communication to affect coorientation variables. Pasdirtz (1969), for instance, found that among husband-wife pairs who had been classified as Pluralistics on the Family Communication Pattern typology of McLeod and Chaffee (1972), Accuracy increased more after a discussion period than for the other family types. Protective pairs increased more in Congruency while Consensual pairs increased in Agreement. O'Keefe (1971) concluded from a study of parent-adolescent pairs that the outcome of communication is highly related to role relationships and the relevancy of the topic to the coorienting pairs.

Another strategy, employed less often, is to examine the consequences of the various coorientation states. Stamm and Pearce (1971), for example, found that the amount of communication between dyads is affected by an experimental manipulation of the Congruency

situation. Those subjects in their experiments who thought they agreed with their assigned partners but learned that they did not were more likely to communicate with the partners than those who expected agreement and learned that was correct. But those respondents expecting disagreement who learned they did actually agree with the partners also were more likely to communicate with the partner than those expecting disagreement and receiving confirmation of that expectation. In general, however, there was a slightly higher frequency of communication behavior where subjects thought they were incongruent.

CONCEPTUAL DISTINCTIONS

The conceptual model, as well as the operational one, does provide some basis for distinguishing between Agreement, Congruency and Accuracy. The former and latter, most importantly, are structural in the sense that they are not part of the observational field of the communicating participants. Instead, they form part of the web that unites the communicating unit; they are, strictly speaking, social unit variables. To accept their worth is to accept the position, McLeod and Chaffee (1973) note, that the small social system--even ones as small as the communicating dyad--functions as a unit partly on the basis of intercognitive relations within it. The individual members may not even be aware of these factors.

While Congruency is a relational variable, it is distinct from Agreement and Accuracy in that it is an individual-level measure and concept. In fact, Congruency indexes the extent to which individual members of the unit think they are in agreement. In a sense then, it is the link between the realities of the social unit, which are in part external to the members of the unit, and the members themselves.[1]

Since Congruency serves as this reality link, at least initially, it seems to play a potentially important role in predicting individual behavior. In time, forces in the social situation may correct the initial impression of Congruency or Incongruency, however. While Accuracy and Agreement might be of greater value in predicting how a social unit would respond to environmental forces, Congruency would seem to be the appropriate variable for study of individual behavior. How one sees oneself fitting into

the social fabric is expected to be related to behavior in the social setting.

HISTORICAL DEVELOPMENT OF CONGRUENCY

Congruency has played a central part in balance theories, particularly those of Newcomb (1953) and Heider (1958). While the balance theories differ in many respects, all share the common premise that individuals abhor imbalanced cognitive states (e.g., incongruency with a liked person) and take action to avoid them when possible and eliminate them if necessary. Since balance formulations have their roots in attitude change research, the most commonly explored mechanisms for balance maintenance were in that rubric. The two general options, of course, are a change of attitude or some negation of the stimulus producing the imbalance.

Congruency as an antecedent variable has been studied in the coorientational setting by Nwankwo (1971), who found a consistent, though nonsignificant, relationship between Congruency and various modes of communication during a campus crisis. Clarke (1973) found that teenagers with a large proportion of peers who do not share the same interests and taste in music (i.e., incongruent) are more likely to read about pop music than their counterparts in more homogeneous peer settings.

The study by Stamm and Pearce (1971) has served as a cornerstone of a program of research that has examined the effects of Congruency-like states on other variables (Pearce and Stamm, 1973; Stamm and Pearce, 1974). These two researchers have modified the basic measurement model of McLeod and Chaffee (1973) in a series of studies to focus on the effects of confirmation or disconfirmation of anticipated Congruency or Incongruency on subsequent behavior.

The research to date has suggested that the two variables of anticipated agreement and confirmation do affect communicative responses, though not necessarily in consistent ways across settings and tasks. The early studies (Pearce and Stamm, 1973), for example had indicated that respondents were most likely to make comments to their partners if they had predicted disagreement but that disagreement had been disconfirmed. Subjects in the condition of having predicted agreement but found that disconfirmed were more

likely to have asked questions, than subjects in other conditions. Stamm and Pearce (1974), however, report two later experiments in which those who predicted disagreement, which was confirmed, were the highest in making comments, and, in one case, the highest in asking questions.

While the Stamm and Pearce program of research is promising, it has focused on rather limited responses to the Congruency variable. Congruency is a perceptual response to environmental stimuli which should affect individual behavior in a variety of ways.

CONGRUENCY AND RESPONSES TO A SOCIAL SYSTEM

Congruency can be defined conceptually as an individual's perception of balance (or, more correctly, lack of imbalance) in the relationship between own evaluation of or definition of an object or set of objects and the evaluation or definition of some relevant other. In other words, own position and other's position are, if not complementary, at least compatible.

Often, the relevant other will be an individual, as in the case of a communicating dyad. But sometimes the relevant other will be a collectivity reified by the individual. The statement, "I seldom agree with my friends on politics," implies a perception of Incongruency regarding a collectivity.

Given joint orientation of an individual and a collectivity toward some object, and some uniting link between the individual and the collectivity,(e.g., the collectivity serves as a positive reference group) either Congruency or Incongruency ought to influence the behavior of the individual. Some coping strategy would be needed to deal with the perception that an individual is in or out of step with the collectivity of which he/she is a part.

In general, we would expect increased communicative contact between the individual and the social collectivity to result from Incongruency. We also would expect the individual to begin to adjust some of his or her value systems in an effort to cope with the perception. Incongruency, particularly if pervasive, might result in general shifts in behaviors designed to redefine the situation. If the individual perceives agreement

with the system (is Congruent), we would expect to find more information being sought about the system, increased activity within the system and increased interest in the system.

METHODOLOGY

To test these general formulations and contribute to a theoretical understanding of coorientation, two panel studies of college students were designed. The college setting was chosen as an appropriate one for study of the effects of Congruency because of the general findings of change during the formative college years and the preliminary evidence that perceptions about student opinions are integral to that change (Feldman and Newcomb, 1969).

1971-73 PANEL

In the fall of 1971, a probability sample of 353 undergraduates at the University of Wisconsin-Madison was interviewed by students enrolled in a research methodology course. The interview dealt in detail with student attitudes on a variety of issues and obtained each respondent's own position on those issues as well as his or her perceptions of the attitudes of other university undergraduates. The study was designed to explore alternative methods of indexing the three standard coorientation measures; the resulting data formed the basis of the methodological analyses reported by McLeod, Becker and Elliott (1972).

In the fall of 1973, students interviewed in 1971 who were still on campus were recontacted and interviewed. Again, the questionnaire included detailed probing into student attitudes on diverse issues and obtained both the respondent's own position on the issues and the perceptions of undergraduate sentiment. One hundred students who were interviewed in 1971 were reinterviewed in 1973; most were juniors or seniors at that time. Interviews also were conducted with a probability sample of 539 other students, again as a part of a research methodology course. Upper classmen were under represented in the 1973 supplementary sample to provide a combined "repeater" and "first-time" sample proportionate by class to the population.

(Republican) to 5 (Democrat) with the middle of the scale used for pure Independents.

Political Label. Five labels for a student's political perspective were provided, ranging from Far Right (low score) to Far Left. The students were asked to choose the one which comes "closest to representing your political position."

Social Responsibility. A shortened version of the Berkowitz and Lutterman scale (1968) was used to assess an orientation toward helping others even if there is nothing to be gained from the others. The items used were: (1) People would be a lot better off if they could live far away from other people and never have to do anything for them; (2) It is no use worrying about current events or public affairs; I can't do anything about them anyway; (3) Every person should give some of his time for the good of the community or country; (4) A person should do the very best he can at all times.

Dogmatism. Four items, drawn from Rokeach (1956) and Budner (1962) were employed to measure openness and closedness of belief systems and intolerance of ambiguity. The items: (1) In this complicated world, the only way we can know what is going on is to rely on leaders and experts who can be trusted; (2) Most people don't know what's good for them; (2) A good job is always one where what is to be done and how it is to be done are always clear. (4) The sooner we all acquire similar values and ideas the better.

Coorientation Measures. In keeping with the findings from the analyses of the 1971 data by McLeod, Becker and Elliott (1972), more than one approach to measurement of the coorientation variables was employed in the analyses to follow.

In 1971, students had been asked their own opinions on a list of 25 issue statements and then asked to indicate "how you think the average undergraduate would respond." The mean response of all students to the first question was used as the indicant of "aggregated opinion" against which the student's estimate of student opinion and own opinion were evaluated.

While McLeod, Becker and Elliott have shown that a profile measure of similarity, using an actual correlation coefficient, computed for each individual to show the match of these sets of responses, was the preferred method for measuring coorientational

accuracy based on reliability and validity criteria, that technique could not be employed here. The earlier analyses had shown that a large list of items was needed to produce stability in these coefficients. Since about half of the items used in the 1971 questionnaire were thought to be too outdated to repeat in 1973, actual repeat data are available for only 12 items. Because of this, the D-Score method was used here to assess Accuracy, Agreement and Congruency.

The list of items used here sought to determine student opinion on such issues as prison reform, appropriate sexual behavior, the job market, academic issues and student activism.

A second type of question, first pretested on the 1971 questionnaire, was repeated in 1973. The respondent was asked to estimate the percentage of undergraduate students at the University in each of five categories on three attitude items. For instance, the respondent was instructed to "estimate the percentage of University of Wisconsin-Madison undergraduates who would strongly agree, agree, be neutral, disagree, or strongly disagree with" the statement "the government should provide a reasonable income for those people who cannot find work." The respondents were asked to try to get their percentage distributions to sum to 100%. Three such attitude items, drawn from the list of 12 opinion statements, were used in 1971 and 1973 and form the basis of the Distributional Accuracy, Agreement and Congruency measures employed here. The student's own opinion was compared with the percentage of students picking that particular response in the case of Agreement and the percentage of students thought to pick that response for Congruency.

Data from the 539 respondents interviewed only in 1973 are used here only to estimate the actual undergraduate opinion in 1973, as needed for the Accuracy and Agreement measures. For all analyses that follow, only the 100 repeaters are used.

1971-1973 PANEL RESULTS

Means and standard deviations of the coorientation measures are shown in Table 1. The overall impression is one of similarity in levels between 1971 and 1973. All three measures using the simple D-score show only nonsignificant increases and the significant

increases for Distributional Congruency and Agreement are not large. The similarity in Congruency and Agreement levels also indicates that there is no aggregate tendency to project or wildly overestimate the extent of Agreement with the respondent's own position. Despite having spent two additional years in the university system, the 100 repeater respondents fail to show any sign of an increase in Accuracy.[2]

Table 1 about here

Reliability and Validity

Reliability and convergent and discriminant validity are tested in Table 2--adapting and extending the Campbell and Fiske (1959) multitrait-multimethod matrix to the longitudinal design used here.[3] The first set of Discriminant Reliability comparisons (same trait, same method, different time) show the stability coefficients (autocorrelations) across the two years for the three traits (coorientation variables) and two methods (D-score and Distributional index). Whereas the two methods show similar and acceptable levels of stability for Accuracy (.43 and .41), there are apparent problems for the Distributional indices of both Congruency and Agreement (.13 and .20). This could indicate that these two measures are being affected by independent variables entering between 1971 and 1973, but the fact that the D-score stability coefficients are considerably higher (.31 and .50) suggests unreliability of measurement as a stronger explanation. Distributional indices of Congruency and Agreement both utilize only 3 comparisons (1 judgment x 3 items), while Distributional Accuracy uses 15 (5 judgments x 3 items) and each of the D-scores involves 12 comparisons (1 judgment x 12 items).

Discriminant power of the stability coefficients is examined by introducing the second set of two rows, the average of the cross-time correlations with the two different coorientation measures (different trait, same method, different time). Discriminant Reliability resulting from subtracting the different trait matrix entries from the stability matrix is shown in the third set of rows in Table 2. For example, the Congruency D-score autocorrelation is only +.02 above the average of the 1971 Congruency measure with 1973 Accuracy and Agreement correlations, thus suggesting a

lack of discriminant power for Congruency D-scores. Only the Accuracy measures consistently survive this test.

Table 2 about here

A second type of test is shown in Table 2 by the comparison of methods controlling for time (same trait, different method, same time). The 1971 comparisons show acceptable levels of correlation between D-scores and Distributional indices for all three coorientational variables (.42; .44; .48); however, the between-method correlations fall off in 1973 for both Congruency and Accuracy (.23; .20). This results in the very low Discriminant Validity power for the 1973 levels of these items in the sixth row of comparisons. Only Agreement shows Discriminant Validity at both time points.

The third set of tests shown in Table 2 examines Discriminant Validity for <u>different</u> methods over time. The convergent comparisons (same trait, different method, different time) show stability (.31 and .36) for Accuracy, but varying levels for Congruency (.11 and .22) and Agreement (.12 and .32). For whatever reason, 1971 Distributional indices predict better to 1973 D-scores than the reverse sequence for both groups. Once more, the Accuracy variables survives the Discriminant Validity test shown in the final set of rows of Table 2.

Taken together, the convergent and discriminant analyses suggest caution in the use of these coorientation measures. It is clear that Distributional measures of Congruency and Agreement using only three judgments provide relatively unstable estimates. A second problem stems from the general decline in the between-method associations for Congruency and Accuracy in 1973. We do not anticipate very high correlations for Accuracy, for example, since the D-score measure indexes the ability to reify an "average undergraduate student" while the Distributional index requires precision in judging the magnitude of both minority and majority opinion. But we have no theoretical reason to expect such a marked decline in the correlation between the two measures over time (.44 to .20). One possibility is that instrument decay occurred in the

use of items less relevant two years after they were written in 1971. Another possibility is that various non-coorientational causal influences have intervened to differentiate the 1973 coorientational variables. At any rate, differences in time and method of measurement need to be carefully considered in subsequent analyses.

Figure 2 about here

Cross-Lagged Analyses

It is apparent even in the cross-time different-measure comparisons where the different trait correlations average .22 that there is considerable overlap in Agreement, Congruency and Accuracy beyond any artifact of measurement. This may be due in part to causal relations among the coorientation variables. This possibility was examined in a cross-lagged correlation analysis shown in Table 3. Though the evidence on direction of relationship is somewhat ambiguous, there is some suggestion that Congruency is causally prior to Agreement. The lagged correlation for such an effect is considerably stronger than the reverse sequence. This is in keeping with previous theoretical statements about the causal priority of Congruency.

Table 3 about here

The presence of numerous relevant measures in both waves of our 1971-73 panel study permits us to use cross-lagged correlations to examine the potentially causal relationships of Congruency and other variables. These cross-lags are shown in Table 4. (Since most of the theoretical predictions are based on Incongruency (Low Congruency) entries in the following tables represent relationships between Incongruency and other variables.) There is mixed support for the expectation that Incongruency would lead to increased communication for the students. Specifically, we had predicted positive relationships between Incongruency and communication based on the assumption that lack of Congruency would stimulate information exchange. In fact, Distributional Incongruency is negatively related to the amount of public affairs media use, and unrelated to the total amount of interpersonal discussion. The expected

positive relationship, however, does appear for both opinion seeking and opinion giving if the Distributional measures are used. In all three cases of significant effects for the communication measures, the lag from Congruency to the media variables is considerably stronger than the reverse lag. Organizational participation also is unrelated to the Incongruency variable, suggesting that perceived agreement has little effect on such gross interactive behaviors.

Area of study or major and the two views of functions of the university are included in Table 4 to give a rough indication of the effects of Incongruency on reactions to the university setting. The evidence, however, is that any relationship existing between these variables results from their effects on Incongruency rather than the reverse. The picture is further complicated by sign reversals between the two measures of Incongruency. The simplest explanation is that the relationships are spurious, though it is unclear what is the cause of the potentially interesting relationship.

Table 4 about here

Congruency does seem to lead to increased political activity in the form of voter registration and to shifts toward Democratic politics. In both cases, the relationship is clearest when the distributional measures are used. The political label variable, however, is not clearly related to Congruency.

The final two measures shown in Table 4 are for personality variables. The results are hardly convincing. There is some slight hint that dogmatism leads to higher levels of Incongruency, but the conclusion is very tentative.

Table 5 shows two kinds of controls introduced to test for spuriousness. The first control is the elimination of the effects of Agreement at Time One from the relationship between Time Two Congruency and Time One levels of the test variable. The second control eliminates both Agreement and Time One level of the test variable. In general, these controls do not alter the conclusions reached from examination of Table 4.

Table 5 about here

The data seem to indicate that Incongruency leads to two specific kinds of interpersonal communication, opinion seeking and opinion giving. Congruency, however, is related to high levels of media use and increased political activity and liberalism of party affiliation. The congruent rather than the incongruent, move toward the dominant political values on campus. The findings are clearest when the distributional measures of Congruency are used, despite the indication from the earlier analyses that these measures were more unstable. It seems the apparent unreliability in Table 2 results more from real change in Congruency over time than unreliability of measurement.

1973-1975 PANEL

In order to elaborate on these findings and put them in fuller perspective, a second study of University of Wisconsin-Madison undergraduates was undertaken. In the Fall of 1975, a probability sample of 593 registered undergraduates was interviewed. Included in the sample were 153 students who had been interviewed in the 1973 study, thereby forming a second panel for analysis. The interviews were conducted by students enrolled in a research methods course; again the questionnaire focused in part on student attitudes on a wide range of topics.

Although the first study showed some patterns among the relationships with Incongruency, most of them were relatively weak. Such a tendency could be attributed to four factors: 1) Incongruency is actually only weakly related to the dependent variables; 2) Incongruency and the dependent variables are unreliably measured; 3) A curvilinear relationship exists between Incongruency and the dependent variables in which case linear coefficients under represent the true relationship; and 4) the relationships are attenuated due to interaction with third variables, i.e., the relationship is strong only under certain conditions. Since we have already discussed the first two possible explanations for low levels of relationship, the analyses which follow deal primarily with the possibility that the relationship between Incongruency and various dependent variables is curvilinear and/or that the relationship occurs

only when third variables such as openness to change and political label are taken into account.

The openness to change variable was included because of the promise it has offered in previous analyses of the campus setting. Feldman and Newcomb (1970) have concluded that "existing studies tend to show that the impact of college is greatest on those students who are ready to change either because they are psychologically open to new experiences or because they are open to the influence of others." (p. 304)

Political label was chosen as a potentially important third variable because a person's position on the political spectrum should help to direct the outcome of Incongruency. We would expect, for example, that a student who enters college as a Moderate or Conservative is much more likely to change his/her political perspective than a student who enters as a Liberal or Leftist, simply because the predominant mode of the campus is in the leftward direction. Perceived disagreement (Incongruency) should have some impact here as a catalyst for subsequent change, i.e., those who perceive disagreement and are correct in their assessment, will be more likely to change than those who do not perceive disagreement.

The following measures, which are used in the analyses to follow, were included in the 1973-1975 questionnaires.

Newspaper Public Affairs Use. Frequency of reading local government stories in the newspaper; frequency of reading national government stories in newspapers.

Television Public Affairs Use. Frequency of viewing national news broadcasts on television; frequency of viewing local news broadcasts on television.

Concept Domination of Friends. In 1973 four items reworded from the original Family Communication Pattern measures of socio- and concept-orientation to apply to a respondent's "five friends here in Madison with whom you talk quite frequently." In 1975 the socio-orientation was measured by asking the respondent to specify the degree to which his/her friends emphasized "not hurting anyone's feelings" (socio) and "developing specific arguments" (concept) during conversations. In both years

the degree of concept-orientation in relation to the socio-orientation was used as a single measure of concept domination.

Diversity of Friends. Summary measure of a number of categories of friends; in 1973: number of Republicans, Democrats, regular church attenders, Letters and Science majors, old friends known before college and people live with; in 1975; number of friends from the same political party as the respondent, married, and who expect to go to graduate or professional school. The higher the number of friends in each category the lower the degree of diversity of friends (the entries in tables to follow have been reversed to represent the higher end of the scale as high in diversity).

Political Discussion Disagreement with Peers. Frequency of discussion/disagreement with respondent's friends on political issues.

Political Discussion with Parents. Frequency of how often respondent talked with parents about political issues while respondent was growing up.

Communication with Parents. Frequency of telephone calls and frequency of letters from parents since beginning of semester.

Political Party Affiliation. (Same as in the 1971-1973 questionnaire)

Political Label. (Same as in the 1971-1973 questionnaire)

Political Interest. Degree of respondent's self-reported interest in politics, in general.

Political Participation. Summed measure of whether respondent had worn button or displayed sign, contributed money, attended meetings or circulated a petition "during the last two years."

Expectation of Future Change. Respondents were asked to judge how likely it is that during the next four years they will change their views on political values and beliefs.

Moved to Left/Right. Students who answered "yes" to the question, "Would you say your political perspective has change since you entered college?" were then asked, "Have you moved toward the left or toward the right?" These measures are dichotomized

such that those who reported having moved toward the left were given a "1" and all others a "0" on the Moved to Left variable. Those who reported moving toward the right have been given a "1" on the Moved to Right variable while other possible directions of movement (left, neither) have been coded "0".

Coorientation Measure. Measures were available only in the 1973 questionnaire. Since preliminary analyses showed that the distributional measures of the coorientation variables were relatively unstable in 1973, only the D-score method was used here to assess Accuracy, Agreement and Congruency. The D-score was calculated using 25 attitude items which the respondent scored for him/herself and for the "average undergraduate". The entire 1973 sample was used to calculate the "actual" average undergraduate opinion.

1973-1975 PANEL RESULTS

Curvilinearity

In order to test the possibility that the relationships being examined were attenuated by non-linearity, the Incongruency variable was partitioned into six groups of approximately equal size and variance. It appeared reasonable to suspect that some of the relationships were curvilinear on theoretical as well as methodological grounds. Feldman and Newcomb (1969) have discussed the phenomenon where in smaller social systems such as the college those individuals who either perceive themselves to be highly in agreement or disagreement with the predominant mode of attitude/value structure will form deviant subgroups which tend to isolate them from the reality of the larger social system. The greatest change then, would be expected to be at moderately high rather than very high levels of discrepancy as is assumed in the linear model.

The results of the non-linearity testing are presented in Table 6. The Eta statistic squared (Eta ^{2}) is a measure of total association (between Incongruency and the dependent variable) represented by the ratio of between-group (six Incongruency groups) to total variance. The F-ratio expresses the incremental variance in the dependent variable accounted for by E^2 in excess of that of the linear correlation r^2. For the

"controlled" analyses, the variance accounted for by the 1973 levels of the dependent variables has also been previously removed for the incremental comparisons.

Since these tests for non-linearity put the researcher on the wrong end of the null hypothesis (i.e., the deck is stacked in favor of the linearity the researcher is defending), F-ratios greater than 1.00 have been presented to show curvilinear tendencies.

Table 6 about here

Although few of the F-ratios approach the usual levels of statistical significance, on the average the non-linear model doubles the amount of variance accounted for by the linear model in the relationship between Incongruency and the dependent variables. In particular, only 16% of the total association of Incongruency with the two media variables (after partialling out T1 level) is accounted for by the linear model (r^2). Only 30% of the variance averaged across the six interpersonal communication dependent variables is accounted for by the linear model, and although the linear model is stronger for the seven political dependent variables, E^2 still more than doubles the amount of variance accounted for. About five of the fifteen dependent variables show noticeable departures from linearity.

From examining mean differences among the six Incongruency level groups (not shown in this table) it is possible to see how a linear model is not the best fit in many of the comparisons. In more than half of the comparisons the extreme Congruent and extreme Incongruent groups show relatively strong and opposite differences in means; however, the levels of the intermediate groups tend to fluctuate strongly away from the linear regression line. For four dependent variables (Newspaper Public Affairs Use, Political Discussion with Peers, Political Label and Political Interest), the relationship approaches the curve derived from a third-order polynomial ($Y=a+b_1X+b_2X^2+b_3X^3$) in that the most Congruent group shows the lowest level of the dependent variable, while the next most Congruent group shows a level almost as high as the most Incongruent group. The levels then decline and then rise again with the most Incongruent group showing high levels of the dependent variable.

Since we lack any underlying theoretical rationale for the presence of third order polynomials (Feldman and Newcomb imply a second-order polynomial), we are unable to determine if this is the true function for the effect of Incongruency or, alternatively, whether it indicates a confound through interaction of Incongruency and dependent variables with some set of third variables. The latter possibility helped to lead us toward examining the role of two additional variables that might operate as contingencies for the effects of Incongruency on change in college: the Expectation of Change in the Future and Political Label.

Contingent Variable Analysis

The 153 respondents were partitioned into four basic groups by crossing the dimensions of Expectation of Change in Future and Political Label. The 1973 measures of these variables were used, retaining their later 1975 levels as dependent change variables in our analyses. Those students were classified as Open who said they were "very likely" or "likely" to change their political values and beliefs in the next few years. Those placed in the Closed group said they were "unlikely" or "very unlikely" to change. About 60% (93 students) were classified as Open. Students who labeled themselves as "Far Left" (5%) or "Liberal" (43%) in 1973 were classified as "Left" oriented while those who categorized themselves as "Moderate" (45%) or "Conservative" (7%) were classified as "Right." No student chose the "Far Right" label in 1973.

The next step was to compare the four Change Orientation-Political Position groups on the coorientational and dependent variables. Standard scores, used so as to facilitate comparison across dependent variables, were computed by subtracting a given cell mean from the grand mean and dividing by the grand standard deviation. Where completely comparable measures were used in both 1973 and 1975 (the last 11 dependent variables), the grand mean and standard deviation of the two years was used. In other cases the mean and standard deviation for the indicated year was the basis for standardizing.

Table 7 about here

The standard scores of the four groups are shown in Table 7. From the cell sizes of the four groups, it is obvious that a greater proportion of the Right than the Left respondents expected to change. This perhaps reflects their correct perception of the leftward norms of University students at least at the time of the 1973 study. More important to the study is a tendency for the Open respondents to be higher on Congruency. To the extent that the Open respondents were correctly anticipating actual change, a confounding is suggested such that the change shown by the more Congruent respondents is more a function of their greater orientation toward change rather than their low degree of Incongruency. At least, the finding suggests the need to control analyses of Incongruency and change by accounting for the prior expectation to change.

The Open-Right group is clearly higher than other groups in both Congruency and Agreement. The theoretical direction of the functional relationship, if any, is unclear, however. Did their moderate-conservative position on the political spectrum and their agreement with students on issues combine to cause them to expect to change in the future, or did their basic openness to change along with their moderate position lead them to higher levels of Congruency and Agreement? The latter explanation may be less likely because we can ask why their openness did not also lead to adopting a Liberal political label since that was the dominant norm among upperclassmen at that time.

Newspaper Public Affairs reading is shown in Table 7 to clearly distinguish the Closed-Left from the Open-Left respondents in 1973. Whether this indicates reinforcement-seeking by the former group is not clear, but in any case the differences are not significant two years later. Television Public Affairs viewing in 1975 begins to show some signs of the two Open groups watching more than the two Closed groups.

Most of the six interpersonal communication variables reveal rather substantial differences among the Contingency groups. The Left students had more Concept-oriented friends in 1973, although this difference disappears two years later. By then, the Right oriented respondents had begun to have friends who were more different from

themselves than was the case for the Left. Possibly, this reflects the greater opportunity to be different from the Right than from the Left during the last two years in school when the Liberals where ascendant. In terms of actual political discussion and disagreement with peers, however, the Left shows much higher levels than the two Right groups in the 1975 wave. Discussion of politics with parents is also more common among the Left respondents in the later wave.

Expectation to Change also shows some relationship with interpersonal communication. In the earlier 1973 wave, respondents Open to Change tended to have more diverse friends, but contrarily were less likely to discuss politics with peers or parents at both time points. Although they were expecting to change, apparently they were not seeking the communication that might facilitate that change.

The two t-values over 20 shown in Table 7 are, of course, the two variables comprising our contingency groups. As we would expect, there is a strong tendency for the Left respondents to also be Democrats. In 1975 at least, the Closed respondents are also likely to affiliate as Democrats. The comparison of standard scores for the various groups from 1973 to 1975 for Party Affiliation also shows some validity for the Openness to Change measure. Among the Left, a net change of -21 is shown for the Open compared to a net of only +04 for the Closed group; the Right respondents show a similar result with +21 for the Open and only +04 for the Closed. While the general change on Political Label may reflect a regression to the mean phenomenon, the results again show much greater change for the Open (-31,+58) than for the Closed (00,+18). Both Political Party Affiliation and Label reveal a net gain for the Democratic and Left across the total sample from 1973 to 1975.

Two other political dependent variables, Interest and Participation, show considerably higher levels for the Left than for the Right at both time points. An additional effect of Openness is present for Political Participation with the Closed Left being particularly participatory. Although the overall level of Interest is greater in 1975 than in 1973, there is a sharp decline in Participation in all groups.

The changes in Expectation to Change levels reflect what is probably a statistical regression effect, but the Closed Left change very little (-95 to -91). This group also shows the lowest level of Left Movement. Possibly reflecting the degree of opportunity to move, it is the Open Right who are most likely to Move Left and the Open Left who are the most prone to Move Right.

In general, then, there are some large differences in both level and change in level among the four groups on the various dependent variables. Since the groups also show differences in Congruency, it is likely that our contingent variables will affect the relationships between Incongruency and the dependent variables. The contingent controls for Change Orientation and Political Position could have three possible effects. First, they could seriously weaken or totally wash out the modest Incongruency correlations found for the total sample. Secondly, the relationship of Openness and Congruency may have suppressed the association of Incongruency and change such that the correlation within each of the four groups would be considerably higher than that for the total sample. Finally, Incongruency may interact with either or both of the contingent variables. This situation would be indicated by considerable variation in level of association among the four cells.

The relevant correlations for studying the effects of the contingent variables are shown in Table 8. The simple zero-order and partials of Incongruency and the dependent variables are shown in the first column of numbers. The partial is the control for the 1973 (T1) level of the particular dependent variable. The next four columns show the association between Incongruency and the same variable within the four contingent groups. The last three columns are the signed differences between the Incongruency correlations for all Open vs. all Closed respondents, all Left vs. all Right, and the third order interaction comparison of correlations within the Open Left + Closed Right vs. Open Right + Closed Left groups.

Table 8 about here

Table 8 shows a significant partial relationship for Newspaper Public Affairs reading in the total sample. That is, that the greater the Incongruency the greater the increase in reading of political news two years later. When we look at the same relationship across the four groups, however, we see considerable variation ranging from a -.08 within the Open Left to a +.36 among the Closed Right. Incongruency has a substantial effect on increasing newspaper use only among those not expecting to change. Since the two Closed orientation groups declined in newspaper use in the two year period, it is also reasonable to assert that Congruency may lead to lower levels of reading among the Closed students. There is also some evidence that Incongruency has stronger effects on news reading among the Right than among the Left. In the context of the Right oriented student Closed to change, information seeking, possibly of a selective nature, from newspapers may be a replacement for behavioral change among those experiencing feelings of Incongruency. For them, selective reading may be an alternative to interpersonal communication which is heavily left politically in the University environment.

Television Public Affairs viewing has no relationship with Incongruency in the total sample (-.01). Within the four contingent groups, however, there is some hint that both Change Orientation and Political Position may have interactive effects with Incongruency. Among the Open Left group, the greater the Incongruency the greater the gain in news viewing. In the Closed Right group, however, it is the more Congruent students who began to watch more news. The differences are not overwhelming, but they do show a pattern opposite to that for newspaper reading.

The total sample correlations for Concept Domination in Table 8 indicate that Incongruency leads to the development of pluralistic peer groups. Our curvilinearity analyses in Table 6 had shown that this relationship was the most nearly linear among the fifteen dependent variables. It is not surprising, therefore, that the relationships are positive in all contingent groups and fairly even in the strength of association in three of them. Only among the Closed Left is the relationship weak (+.09) and this could be a function of the high prior 1973 levels of Concept Domination in that group as shown in Table 7.

None of the three remaining Peer interpersonal communication measures (Diversity, Discussion and Disagreement) shows any effect of Incongruency for the total sample. The first of these, Diversity of Friends, however, does show a strong interaction with Change Orientation. While the Open respondents show no relationship between Incongruency and Diversity of friends, the Closed group reveals a strong association. Among the Closed Left who showed sharply declining levels of Diversity in Table 7, this is best interpreted as Incongruency leading to less heterogeneity of friends. For the Closed Right respondents, whose peer group is becoming more diverse, this suggests that Congruency leads to much greater heterogeneity. The frequency of Peer Political Discussion also shows an interaction that produces correlations stronger than the negligible association shown for the total sample. This Incongruency interaction is with Political Label such that among the Left respondents whose level of discussion was shown to increase across the two years in Table 7, Incongruency is associated with such an increase. For the Right students, on the other hand, Incongruency is related to their decrease in discussion as juniors-seniors. Although Peer Disagreement shows some indication of a third order interaction producing correlations above those for the total sample, the strength does not approach statistical significance.

Parental Discussion also shows some hint of increasing correlations within the contingent groups beyond the negligible association for the total sample, but again the differences are not large. Communication with Parents, the number of letters and telephone calls home, does show a modest partial correlation (-.14) such that Congruency with student opinion is associated with an increase in parental contact. The relationship remains consistent in sign among the four contingent groups, but its magnitude varies greatly. It is considerably stronger for Left (-.23 for the combined Left groups) than for the Right students (-.06). The reason for this relationship is not very clear, although the previous college change literature suggests that student activists are strongly influenced by their liberal-left parents.

The total sample analysis shows a clear tendency for those holding Congruent perceptions in 1973 to be more likely than others to move toward Democratic party

affiliation. Within the contingent groups, this association undergoes considerable change with correlations ranging from -.04 to -.40. The relationship is considerably stronger for the Right than for the Left (-.29 vs. -.12). Since the Right students tended to move toward Democratic status (Table 7), we can infer that Congruency is associated with a move in that direction. Although the correlation between Party Affiliation and Political Label is substantial (+.43 in 1973, +.24 in 1975), the Incongruency relationship with Label is opposite, albeit small, (+.07) to that of Incongruency and Party Affiliation. It is significant, however, only for the Closed Left group in a direction opposite to their Incongruency-Party Affiliation relationship. That is, Incongruency leads to both strengthened Democratic party affiliation and to more moderate rightward political positions among the Closed Left. It is equally possible that Congruency leads to a non-party Independent stance and yet to maintaining or strengthening Liberal leftward positions. This apparent contradiction is underlined by a -.20 correlation between Party Affiliation and Political Label among the Closed Left in 1975. What has become more common among students and to some extent older adults as well is a combination of a Liberal position with independence from party affiliation and for Democrats to call themselves political moderates. Our data do indicate that Incongruency with student attitudes contributes to this tendency at least among those students who were Liberal earlier and did not expect to change.

Both Political Interest and Participation show nonsignificant total sample correlations in the direction of Incongruency stimulating motivation and behavior. The correlations within the four contingent groups do give some hint of an interaction regarding Political Interest as the relationship is stronger for the Closed than for the Open respondents. The contingent groups also shift the Incongruency-Participation correlations to +.16 for the Open Right and -.14 for the Closed Right. Both the Interest and the Participation interactions are rather weak, however, so we should not make strong inferences.

The total sample partial correlation of -.22 in Table 8 shows that the more Congruent students were also more likely to expect to change in the future even after

their earlier 1973 Change Orientation was controlled for. An examination of the contingent relationships reveals that this holds only among the Closed respondents who were originally likely to change. Congruency to student attitudes does not seem to act to maintain an expectation to change among those previously open to change.

Incongruency seems to be related to Moving Left (-.19 partial in the total sample), but this seems pretty much confined to Open Right students who were also shown to be the most likely to move leftward in Table 8. There is no overall sample relationship of Congruency and Move Right, but again the sub-group most likely to move right shows a relationship. This is the Open Left group, but this time it is Congruency rather than Incongruency that is related to change. Those seeing themselves closest to student attitudes later were the most likely to perceive themselves as having moved right.

In general, there is ample evidence of many marked interactions of Incongruency with Change Orientation and Political Label in the effects on the communication and political dependent variables. In no instance do we see anything like even levels of Incongruency correlations across the four contingent groups. As a result, it seems important to take into account change orientation and prior position when we investigate the effects of coorientational states.

CONCLUSIONS

In summary, we have used two panels to examine a variety of methodological and theoretical questions concerning the study of communication as coorientation. First, comparisons of mean levels of the coorientational measures indicated that in general, students as a whole do not become more Accurate during the college years. These findings are intriguing in light of most communication research which would predict increasing accuracy over time, since they argue that we must also explain conditions which lead to decreases in accuracy. Possibly an explanation can be found by examining communication within subgroups of the college population. Students who align themselves with students of similar perspectives may become less exposed to divergent

orientations later in their university careers. Secondly, we examined the reliability and validity of two kinds of coorientation measures (D-Score and Distributional) over time. These analyses provided evidence that it is important to have a sufficient number of items in constructing the coorientation measures in order to guard against measure unreliability. Although gathering distributional data can be cumbersome, it should be possible, rather than asking for the whole distribution of perceived student opinions, to ask simply for the percentage the respondent thinks are in the same category as his/her own. In this way, more items could be assessed in the same amount of time. The reliability and validity analyses also pointed to the need to choose attitude topics which will remain salient for the time period of the study. The fact that some of the topics we were studying became "old news" befo: the second wave of the study may have affected the stability of the coorientational measures.

Further analyses of the interrelationships of the coorientation variables across time using cross-lagged analyses provided evidence that previously hypothesized causal sequences from Congruency to Agreement have some credence. In looking at functional relationships with other kinds of variables, we found that initial perceptions of agreement (Congruency) were related to increased media use, low opinion seeking and Democratic party affiliation. As a dependent variable Congruency or higher levels of perceived agreement in 1973 was related to higher media use, a liberal political orientation and low dogmatism in 1971. Accuracy of perceptions of where other students stood in 1973 followed high campus organization participation in 1971. High media use in 1971 also led to high Agreement in 1973 as did an initial emphasis on learning about the self and society as important functions of the university. Initial agreement led to less opinion giving, less emphasis on vocational training and more emphasis on learning about the self and society while in college.

Although the second panel, measured in 1973 and 1975 did not have measures of coorientation included at both time points, it did serve as a way of replicating some of the relationships found in the 1971 and 1973 panel. Analysis of the second panel

substantiated the previous findings that Congruency is associated with increased non-Republican party affiliation and/or Incongruency with changes toward Independent or Republican affiliation. The second panel also replicated the relationship between Incongruency and increased political participation (Registration in 1971-73 and campaign participation and interest in 1973-75) although the levels of political activity were much lower in the 1973-75 Panel. It appears that this may be due to a generational or cohort effect such that interest and concern with politics on college campuses began to decline soon after the beginning of the Watergate trials in the Fall of 1973. The interesting point is, however, that the relationship between coorientation variables and political value change remains despite drastically decreased political interest in general.

Some discrepancy in the findings between the two samples appeared in the relationship between Incongruency and media use, however. In the 1971-73 panel we found that high levels of Incongruency lead to decreased levels of media use. In the 1973-75 panel, however, we found that Incongruency led to increased levels of newspaper public affairs use, but only for those students who didn't expect to change in the future and especially for those who were on the right of the political spectrum. One explanation may be that different coorientation measures were used (Distributional in Panel 1 and D-Score in Panel 2) and that the measure of Media Use in 1971-73 included student-oriented media (campus newspaper). Nevertheless, the 1973-75 finding reiterates the need to look at possible third-variable interactions with the basic relationships between coorientation, communication and change while in college.

The major set of analyses done with the second panel (1973-1975) was focused on the interrelationships of coorientation variables, communication (both mass media and interpersonal) and subsequent change on political variables while controlling for initial orientation toward the possibility of change and political position.

We found some evidence that the basic relationship between Incongruency and some of the political and communication variables was curvilinear. This increased the probability that some third variables were interacting with Incongruency and the

dependent variables to confound the first-order relationship. In order to examine this possibility we controlled for Expectancy to Change on politics in the future and initial Political Label as perceptual sets which might affect subsequent change in interaction with perceived disagreement (Incongruency) with the college community.

In the final part of the analysis of the second panel we found that by partitioning on prior orientations (expectation to change and political position) the relationships between Incongruency, communication and political change were highly variable across the four groups. These analyses gave strong support for the basic relationship between Incongruency and communication and communication and subsequent change on political variables but also pointed to the need for control of prior orientations. For instance, it appears that those students who are closed to change as they enter college and perceive disagreement (are Incongruent) will increase their media use and subsequently change on political position if they were to the right on the political spectrum to begin with. On the other hand, those students who enter college on the left of the political spectrum and are Incongruent and not open to change will increase their interpersonal discussion which will, in turn increase the likelihood of their movement to the right on the political spectrum. Such different sequences of communication and change imply that there are a variety of solutions to dealing with initial Incongruency. As the balance models suggest, a person may seek more information, may discount the others' orientation, may change his/her opinion, etc. It appears that the predictability of these alternatives rests with the ascertainment of prior orientations and the degree of Incongruency encountered in the new environment.

Footnotes

[1]It would be possible, of course, to measure the degree of Congruency or average Congruency in a social unit by aggregating across individuals. But Congruency in its simple form is a property of the individual, not the social unit.

[2]The figures shown in Table 1 for Distributional Congruency are for three items, so the average per item score is 26.3% in 1971 and 29.4% in 1973. Agreement shows a similarly modest gain with 31.8% in 1973 compared to 28.5% two years earlier. Accuracy Distributional scores remained at an 11.5% error per judgment in each of the two years. The D-score measures showed little difference over the two years; unexpectedly, Congruency maintained the highest level of average discrepancy: .99 in 1971 and .93 in 1973. Accuracy showed the lowest average discrepancy per scale on the D-scores with .88 in 1971 and .86 in 1973. D-score Agreement remained at about the same level with .91 average discrepancy in 1971 and .88 in 1973.

[3]The term "trait" is used to be consistent with Campbell and Fiske's terminology. Since both Agreement and Accuracy are <u>inter</u>personal rather than <u>intra</u>personal constructs, the term "relation" would be more appropriate than "trait".

REFERENCES

Berkowitz, L. and K. Lutterman (1968) The traditionally socially responsible personality, Public Opinion Quarterly, 32: 169-85.

Budner, S. (1962) Intolerance of ambiguity as a personality variable, Journal of Personality, 30: 29-50.

Campbell, D. and D. Fiske (1959) Convergent and discriminant validation by the multitrait-multimethod matrix, Psychological Bulletin, 56(2).

Chaffee, S. (1968) Cognitive and coorientational theory in communication research. Paper presented at International Association for Mass Communication Research convention, Ljubljana, Yugoslavia.

Chaffee, S. (1971) Pseudo-data in communication research. Paper presented at AEJ convention, Columbia, S.C.

Chaffee, S., and J. McLeod (1968) Sensitization in panel design; a coorientational experiment, Journalism Quarterly, 45: 661-9.

Chaffee, S. and J. McLeod (1970) Coorientation and the structure of family communication. Paper presented at ICA convention, Minneapolis, Minn.

Chaffee, S., J. McLeod and J. Guerrero (1969) Origins and implications of the coorientational approach in communication research. Paper presented at AEJ convention, Berkeley, Calif.

Clarke, P. (1973) Teenagers' coorientation and information-seeking about pop music, American Behavioral Scientist, 16(4): 551-566.

Feldman, K., and T. Newcomb (1969) The Impact of College on Students. San Francisco: Jossey-Bass.

Grunig, J. and K. Stamm (1973) Communication and coorientation of collectivities, American Behavioral Scientist, 16(4): 567-589.

Heider, F. (1958) The Psychology of Interpersonal Relations. New York: John Wiley & Sons.

Hesse, M., and S. Chaffee (1973) Coorientation in political communication: a structural analysis. Paper presented at ICA convention, Montreal.

McLeod, J. (1971) Issues and strategies in coorientational research. Paper presented at AEJ convention, Columbia, S.C.

McLeod, J., and S. Chaffee (1972) The construction of social reality, pp. 50-99 in J. Tedeschi (ed). The Social Influence Process. Chicago: Aldine-Atherton.

McLeod, J. and S. Chaffee (1973) Interpersonal approaches to communication research, American Behavioral Scientist, 16(4): 469-499.

McLeod, J., L. Becker and W. Elliott (1972) Exploration of methodological problems in coorientational research. Paper presented at AEJ convention, Carbondale, Ill.

Meiller, L. and G. Broom (1976) Experiments in community consensus building: a coorientational analysis. Paper presented at AEJ convention, College Park, Md.

Newcomb, T. (1953) An approach to the study of communicative acts, Psychological Review, 60: 393-404.

O'Keefe, G. (1971) Agreement, accuracy and congruency as dependent variables in field interaction studies. Presented at AEJ convention, Columbia, S.C.

O'Keefe, G. (1973) Coorientation variables in family study, American Behavioral Scientist, 16(4): 513-536.

Pasdirtz, G. (1969) An approach to the study of interaction processes. Paper presented at AEJ convention, Berkeley, Calis.

Pearce, W., and K. Stamm (1973) Coorientational states and interpersonal communication, in P. Clarke (ed.) New Models for Communication Research. Beverly Hills, Calif.: Sage, pp. 177-203.

Rokeach, M. (1956) Political and religious dogmatism, an alternative to the authoritarian personality, Psychological Monographs, (No. 425) 70(18).

Rozelle, R. and D. Campbell (1969) More plausible rival hypotheses in the cross-lagged panel correlation technique. Psychological Bulletin, 71: 74-80.

Sanford, N. (1962) Developmental status of the entering freshman, in Nevitt Sanford (ed.) The American College, New York: Wiley, pp. 253-282.

Stamm, K. and W. Pearce (1971) Communication behavior and coorientational relations, Journal of Communication, 21(2): 208-220.

Stamm, K., and W. Pearce (1974) Message Locus and message content: two studies of communication behavior and coorientational relations, Communication Research, 1: 184-203.

Stamm, K., J. Bowes and B. Bowes (1973) Generation Gap a Communication Problem? A coorientational analysis, Journalism Quarterly, 50: 629-37.

Tichenor, P. and D. Wackman (1973) Mass media and community public opinion, American Behavioral Scientist, 16(4): 593-606.

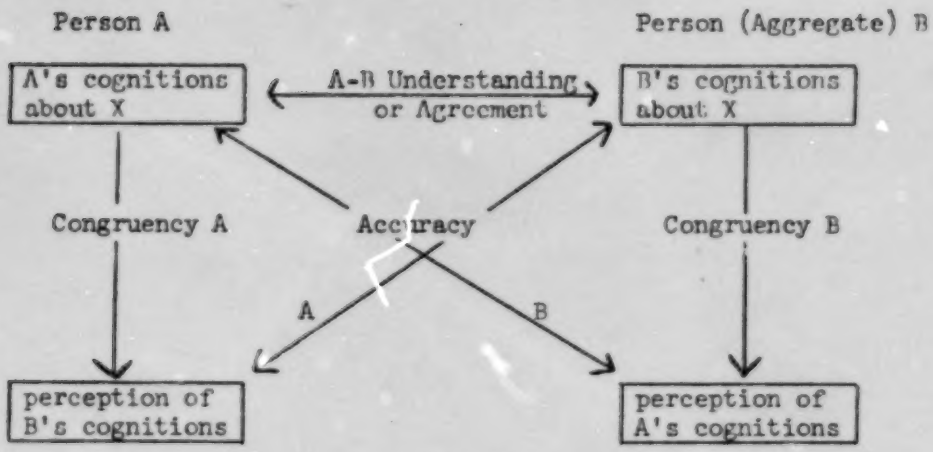
Tipton, L. (1971) Agreement and accuracy in dyadic communication. Paper presented at ICA, Phoenix.

Wackman, D. (1969) A proposal for a new measure of coorientational accuracy or empathy. Paper presented at AEJ convention, Berkeley, Calif.

Wackman, D. (1973) Interpersonal communication and coorientation, American Behavioral Scientist, 16(4): 537-550.

FIGURE 1

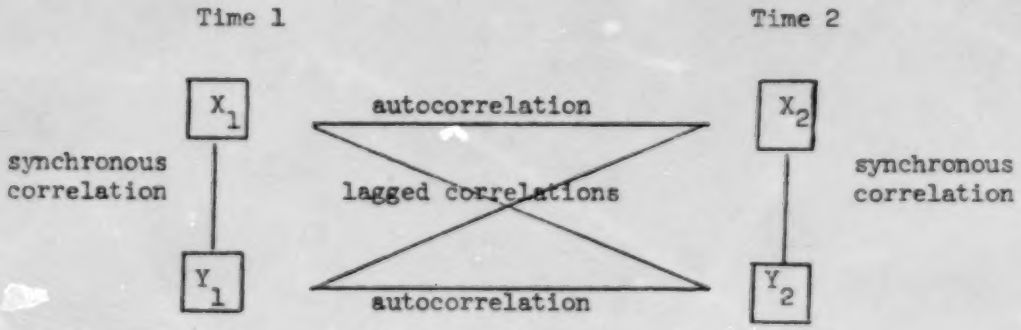
COORIENTATION MEASUREMENT MODEL



Note: The boxes indicate measures that are made on each person or, in this case on a person and an aggregate. Arrows connecting the boxes are labeled to indicate the measures that are compared to construct each coorientational index.

FIGURE 2

BASIC MEASURES FOR CROSS-LAGGED ANALYSIS



Note: Boxes indicate measure to be taken on the two variables X and Y. Lines connecting the boxes indicate correlation coefficients.

TABLE 1

1971-1973 PANEL: MEANS AND STANDARD DEVIATIONS OF COORIENTATION MEASURES

Coorientation Measure	1971 Mean	1971 Standard Deviation	1973 Mean	1973 Standard Deviation	t
Congruency D-Score	36.13	(5.69)	36.83	(3.57)	1.23
Accuracy D-Score	37.48	(3.17)	37.68	(2.84)	--
Agreement D-Score	37.07	(2.96)	37.44	(2.75)	1.26
Congruency Distr.	78.74	(28.97)	88.24	(26.40)	2.59
Accuracy Distr.	127.18	(58.22)	126.93	(53.87)	--
Agreement Distr.	85.46	(24.50)	95.40	(28.19)	2.96

Note: (N=100) For each of the means, the higher the score, the higher the level of the coorientation variable. Means for the D-score measure are the number of discrepant positions on a 5-point scale across 12 items subtracted from 48 (maximum discrepancy for 12 items). For Distributional Congruency the figures represent the respondent's estimates of the proportion of students holding the same position chosen by him/her on three items. Agreement is constructed similarly except that the actual proportion of students holding the respondent's position is used. Distributional Accuracy is the sum of the discrepancy of the respondent's position and the actual percentage of students in each of the five positions across three items subtracted from 300 (maximum discrepancy for three items). The t is the difference between the 1971 and 1973 means for the given year. Significance levels (one-tailed test) are 1.66 at the .05 level and 2.36 at the .01 level. Values of t below 1.00 are not shown.

TABLE 2

1971-1973 PANEL: DISCRIMINANT RELIABILITY AND CONVERGENT AND DISCRIMINANT VALIDITY OF D-SCORE AND DISTRIBUTIONAL MEASURES OF COORIENTATION[a]

Trait	Method	Time	Comparison		Congruency D	Congruency Dist.	Accuracy D	Accuracy Dist.	Agreement D	Agreement Dist.
Same	Same	Diff.	Reliability	1971	.31	.13	.43	.41	.50	.20
				1973	.31	.13	.43	.41	.50	.20
Diff.	Same	Diff.	Control[b]	1971	.29	.31	.31	.12	.22	.16
				1973	.25	.12	.14	.22	.43	.25
DISCRIMINANT RELIABILITY ACROSS TIME[c]				1971	+.02	-.18	+.12	+.29	+.28	+.04
				1973	+.06	+.01	+.29	+.19	+.07	-.05
Same	Diff.	Same	Convergence	1971	.42	.42	.44	.44	.48	.48
				1973	.23	.23	.20	.20	.48	.48
Diff.	Diff.	Same	Control[d]	1971	.32	.23	.29	.27	.19	.31
				1973	.15	.10	.11	.21	.17	.13
SYNCHRONOUS DISCRIMINANT VALIDITY[c]				1971	+.10	+.19	+.15	+.17	+.19	+.17
				1973	+.08	+.13	+.09	-.01	+.31	+.35
Same	Diff.	Diff.	Convergence	1971	.11	.22	.31	.36	.12	.32
				1973	.22	.11	.36	.31	.32	.12
Diff.	Diff.	Diff.	Control[e]	1971	.25	.28	.16	.25	.17	.23
				1973	.29	.12	.20	.24	.27	.17
DISCRIMINANT VALIDITY ACROSS TIME[c]				1971	-.14	-.06	+.15	+.11	-.05	+.09
				1973	-.07	-.01	+.16	+.07	+.05	-.05

[a](N=100) Correlation coefficients of .17 or greater are significant at the .05 level (one-tailed test).

[b]Control coefficients for 1971 are the average Pearson r zero-order correlations of the indicated coorientation variable in 1971 with the other two coorientation variables (same method) in 1973; the 1973 coefficients are the 1973 levels of the indicated variable with the 1971 levels of the other two variables.

[c]Discriminant coefficients are obtained by subtracting the control coefficients from the corresponding reliability or convergence coefficients.

[d]Control coefficients for each year are the average correlations of the indicated coorientation variable with the two different method measures of the other two variables taken at the same time.

[e]Control coefficients for each year are the average correlations of the indicated coorientation variable for that year with the two different method measures of the other two variables taken at the opposite time period.

TABLE 3

1971-1973 PANEL: CROSS-LAGGED CORRELATION COEFFICIENTS FOR D-SCORE AND DISTRIBUTIONAL MEASURES[a]

	Auto Correlations		Synchronous Correlations		Lagged Correlations[b]		Baseline[c]
	$r_{x_1x_2}$	$r_{y_1y_2}$	$r_{x_1y_1}$	$r_{x_2y_2}$	$r_{x_1y_2}$	$r_{y_1x_2}$	
Congruency (x) - Accuracy (y)							
D-Scores[d]	.31	.43	.52	.27	.13	.20	.14
Distributional	.13	.41	.20	.00	.27	.09	.03
Congruency (x) - Agreement (y)							
D-scores	.31	.50	.55	.31	.45	.30	.18
Distributional	.13	.20	.23	.10	.35	.16	.03
Agreement (x) - Accuracy (y)							
D-Scores	.43	.50	.37	.25	.42	.15	.13
Distributional	.41	.20	.32	.15	.15	.17	.07

[a](N=100)

[b]Coefficients presented represent basic measures for cross-lagged analysis as depicted in Figure 2.

[c]Baselines have been calculated using the Rozelle and Campbell (1969) formula. Since the baselines are small in each case, a rough estimate of the significance of each of the cross-lags ($r_{x_1y_2}$ and $r_{y_1x_2}$) is found by using a one-tailed t-test. Correlation coefficients greater than .17 are significant at the .05 level of probability.

[d]See text for difference between D-Score and Distributional measures.

TABLE 4

1971-1973 PANEL: CROSS-LAGGED CORRELATION COEFFICIENTS OF INCONGRUENCY WITH SELECTED MEDIA, INTERPERSONAL COMMUNICATION, EDUCATIONAL AND POLITICAL VARIABLES[a]

Variable		Auto Correlations		Synchronous Correlations		Incongruency as: Dep.Var.	Incongruency as: Indep.Var.	Baseline[b]
		$r_{x_1x_2}$	$r_{y_1y_2}$	$r_{x_1y_1}$	$r_{x_2y_2}$	$r_{x_1y_2}$	$r_{y_1x_2}$	
Media use	D-score[c]	.46	.31	-.28	-.09	.21	-.02	-.07
	Distr.	.46	.13	-.27	-.06	.05	-.17	-.06
Interpersonal Communication	D-score	.35	.31	.13	-.04	.03	.03	.03
	Distr.	.35	.13	.06	-.16	.09	.02	-.02
Opinion Seeking	D-score	.17	.31	.01	-.01	.04	.02	.00
	Distr.	.17	.13	.03	-.10	.00	.21	-.01
Opinion Giving	D-score	.36	.31	.10	-.03	.04	.02	.02
	Distr.	.36	.13	.16	-.10	.08	.20	.01
Organization Participation	D-score	.49	.31	.11	-.06	.06	-.03	.02
	Distr.	.49	.13	.03	-.14	.12	-.11	-.03
Major	D-score	.69	.31	-.06	.00	.17	.06	-.02
	Distr.	.69	.13	-.11	.01	.02	.05	-.01
Univ. Function: Training	D-score	.42	.31	.05	.11	.10	.11	.03
	Distr.	.42	.13	-.09	-.03	.18	-.05	-.02
Univ. Function: Self-learning	D-score	.45	.31	-.27	-.13	.17	-.12	-.08
	Distr.	.45	.13	-.14	.03	.20	.01	-.03
Registration	D-score	.15	.31	-.20	.09	.04	-.18	-.04
	Distr.	.15	.13	-.01	-.07	.09	-.32	-.01
Party Affiliation	D-score	.72	.31	-.23	-.19	.17	-.14	-.12
	Distr.	.72	.13	-.01	.01	.02	-.23	.00
Political Label	D-score	.56	.31	-.13	-.14	.22	.04	-.06
	Distr.	.56	.13	-.03	-.08	.09	.07	-.02
Social Responsibility	D-score	.37	.31	-.10	-.05	.01	.00	-.03
	Distr.	.37	.13	-.21	-.02	.14	.01	-.03
Dogmatism	D-score	.47	.31	.00	.13	.21	-.08	.03
	Distr.	.47	.13	.01	-.11	.04	.02	-.02

[a](N=100)Coefficients presented represent basic measures for cross-lagged analysis as depicted in Figure 2. In each case the y-variable is Congruency and the subscripted number represents either Time 1 or Time 2. The x-variable in each case is one of the variables being examined for causal relationship with Congruency.

[b]Baselines have been calculated using the Rozelle and Campbell (1969) formula. Since the baselines are small in each case, a rough estimate of the significance of each of the cross-lags ($r_{x_1y_2}$ and $r_{y_1x_2}$) is found by using a one-tailed t-test. Correlation coefficients greater than .17 are significant at the .05 level of probability.

[c]See text for difference between D-score and Distributional measure of Congruency.

TABLE 5

1971-1973 PANEL: CORRELATION COEFFICIENTS OF INCONGRUENCY WITH SELECTED DEPENDENT VARIABLES CONTROLLING FOR AGREEMENT AND TIME ONE LEVEL OF THE DEPENDENT VARIABLE[a]

Variable		Simple Time One Incongruency by Dependent Variable	Controlling For Agreement	Controlling For Agreement and Time One Dependent Variab
Media Use	D-score[b]	-.02	-.04	.10
	Distr.	-.17	-.19	-.09
Interpersonal Communication	D-score	.03	.05	.00
	Distr.	.02	.05	.04
Opinion Seeking	D-score	.02	.03	.04
	Distr.	.21	.23	.22
Opinion Giving	D-score	.02	.00	-.01
	Distr.	.20	.21	.17
Organization Participation	D-score	-.03	-.07	-.12
	Distr.	-.11	-.15	-.16
Major	D-score	.06	.05	.10
	Distr.	.05	.06	.17
Univ. Function Training	D-score	.11	.02	.02
	Distr.	-.05	-.09	-.05
Univ. Function Self-learning	D-score	-.12	-.03	.03
	Distr.	.01	.03	.10
Registration	D-score	-.18	-.14	-.12
	Distr.	-.32	-.30	-.31
Party Affiliation	D-score	-.14	-.11	.05
	Distr.	-.23	-.20	-.34
Political Label	D-score	.04	.11	.18
	Distr.	.07	.10	.12
Social Responsibility	D-score	.00	-.07	-.01
	Distr.	-.01	.00	.09
Dogmatism	D-score	-.08	-.17	-.09
	Distr.	.02	-.03	-.00

[a](N-100)

[b]See text for difference between D-score and Distributional measure of Congruency

TABLE 6

1973-1975 PANEL: TESTING FOR CURVILINEARITY: COMPARISON OF PEARSON R AND ETA FOR RELATIONSHIP OF 1973 INCONGRUENCY AND VARIOUS DEPENDENT VARIABLES

		Uncontrolled			Controlled for 1973 Level		
Dependent Variable	Year	r[a]	E	F	r	E[b]	F[c]
Newspaper Public Affairs Use	1973	.01	.16	--			
	1975	.09	.17	--	.09	.19	1.04
Television Public Affairs Use	1973	-.03	.08	--			
	1975	-.01	.13	--	.02	.13	--
Concept Domination of Friends	1973	.12	.17	--			
	1975	.19	.20	--	.17	.19	--
Diversity of Friends	1973	-.04	.14	--			
	1975	.08	.14	--	.09	.14	--
Political Discussion with Peers	1973	.21	.23	--			
	1975	.05	.17	1.03	-.06	.17	1.03
Political Disagreement with Peers	1973	.09	.18	--			
	1975	.09	.16	--	-.02	.19	1.29
Political Discussion with Parents	1973	.13	.18	--			
	1975	.09	.22	1.55	.09	.22	1.81
Communication with Parents	1973	.06	.19	1.24			
	1975	-.10	.20	1.13	-.14	.23	1.24
Political Party Affiliation	1973	-.05	.17	1.01			
	1975	-.15	.22	1.03	-.17	.20	--
Political Label	1973	.16	.30	2.56			
	1975	.14	.27	2.04	.05	.23	1.87
Political Interest	1973	.11	.13	--			
	1975	.17	.22	--	.11	.21	1.33
Political Participation	1973	.19	.27	1.40			
	1975	.19	.19	--	.15	.18	--
Expectation of Change in Future	1973	-.18	.21	--			
	1975	-.28	.28	--	-.22	.28	1.13
Moved to Left	1973	-.02	.08	--			
	1975	-.18	.20	--	-.17	.20	--
Moved to Right	1973	-.02	.13	--			
	1975	.04	.11	--	.03	.11	--

(Notes on following page)

TABLE 7

1973-1975 PANEL: STANDARD SCORES OF COORIENTATIONAL AND DEPENDENT VARIABLES AMONG FOUR ORIENTATION TO CHANGE AND POLITICAL POSITION GROUPS

Variable	Year	Change Orientation: Open Left	Open Right	Closed Left	Closed Right	t levels[a]: Ovs.C	Lvs.R	Interact.
Congruency	1973	+03	+25	-22	-30	2.82	-1.18	--
Accuracy	1973	+01	+04	-09	-03	--	--	--
Agreement	1973	-09	+24	-17	-18	1.67	-1.52	-1.34
Newspaper Public Affairs Use[b]	1973	-31	-16	+59	-05	-3.51	1.73	-2.13
	1975	-05	-02	+18	-19	--	--	1.20
Television Public Affairs Use[b]	1973	-02	+09	+11	-36	--	--	1.51
	1975	+05	+14	-14	-19	1.58	--	--
Concept Domination of Friends[b]	1973	+05	-18	+37	-24	-1.38	2.59	--
	1975	+09	+02	+03	-25	--	--	--
Diversity of Friends[b]	1973	+17	+09	-11	-32	1.91	--	--
	1975	-06	+12	-39	+43	--	-2.80	1.27
Political Discussion with Peers	1973	+12	-24	+44	-18	-1.91	3.25	--
	1975	+17	-37	+52	-31	-2.15	4.50	--
Political Disagreement with Peers	1973	-12	+11	-15	-17	--	--	--
	1975	+16	-16	+34	-07	-1.41	2.69	--
Political Discussion with Parents	1973	-13	-24	+22	+20	-2.37	--	--
	1975	+15	-24	+33	+11	-2.15	2.34	--
Communication with Parents	1973	+04	-14	-08	-03	--	--	--
	1975	+07	+01	-04	+39	--	--	1.30
Political Party Affiliation	1973	+45	-41	+49	-32	-1.51	5.62	1.20
	1975	+24	-20	+53	-28	-2.51	5.39	--
Political Label	1973	+82	-91	+82	-90	-2.52	23.29	2.42
	1975	+51	-33	+82	-72	--	8.11	--
Political Interest	1973	+19	-30	+38	-11	-1.74	3.20	--
	1975	+31	-20	+46	-30	-1.09	4.21	--
Political Participation	1973	+24	-16	+69	-00	-2.47	3.49	--
	1975	-23	-37	+30	-37	-2.40	2.76	-1.25
Expectation of Change in Future	1973	+87	+78	-95	-78	22.99	-2.61	--
	1975	+23	+14	-91	-37	5.10	-1.78	1.33
Moved to Left	1973	+07	-07	-30	-15	1.34	--	--
	1975	+13	+34	-30	+13	2.28	-2.18	--
Moved to Right	1973	+41	-15	-37	+17	1.72	--	3.57
	1975	+32	-04	-03	-23	1.28	1.33	--
	n=	(36)	(57)	(37)	(23)			

(Notes on following page)

Notes for Table 6

[a](N=153) Correlation coefficients of .17 or greater are significant at the .05 level (two-tailed test). The r coefficients shown here tend to be lower than comparable ones in later tables. The attenuation here is due to grouping continuous data into six categories for this curvilinear analysis.

[b]The square of E, Eta^2, is a measure of total association represented by the ratio of between-group to total variance. The ordering or value of the independent variable is of no consequence to the level of E.

[c]The F-ratio expresses the incremental variance in the dependent variable accounted for by E^2 in excess of that of the linear correlation r^2 relative to the variance unaccounted for by the linear model. For the Controlled analyses the variance accounted for by 1973 levels of the dependent variables also has also been previously removed for the incremental comparisons. An F of 2.28 is significant at the .05 level (5, 146 d.f., two-tailed test). F values of less than 1.00 are not shown.

Notes for Table 7

[a](N=153) The t values are for the comparisons of means of open vs. closed, left vs. right and open left + closed right vs. open right + closed left (interactive) groups. A t of 1.98 or greater is significant at the .05 level (two-tailed test). Values of t below 1.00 are not shown.

[b]The 1973 and 1975 measures of these variables are not totally comparable. As a result, standard scores are computed around the mean for the given year. For all other dependent variables, standardization is done on the basis of the grand mean for the two years combined. Decimal points have been omitted before the standard scores.

TABLE 8

1973-1975 PANEL: CORRELATIONS OF 1973 INCONGRUENCY WITH 1975 LEVELS OF DEPENDENT VARIABLES AMONG FOUR ORIENTATION TO CHANGE AND POLITICAL POSITION GROUPS

Dependent Variable	1975r	Total Sample	Change Orientation: Open Left	Open Right	Closed Left	Closed Right	Difference Between Incongruency Correlatio: Ovs.C	Lvs.R	Interact.
Newspaper Public Affairs Use	Simple	.14[a]	-.05[b]	.10	.20	.29	-.21	-.12	-.21
	Partial	.18	-.08	.12	.23	.36	-.26	-.13	-.18
Television Public Affairs Use	Simple	-.02	.20	.01	.04	-.20	.15	.20	-.01
	Partial	-.01	.23	.01	.03	-.13	.17	.16	.07
Concept Domination of Friends	Simple	.19	.26	.23	.09	.22	.10	-.02	.02
	Partial	.17	.25	.23	.09	.32	.10	.01	.03
Diversity of Friends	Simple	.03	.09	-.01	-.26	-.39	.28	-.03	.10
	Partial	-.03	.06	-.01	-.30	-.40	.27	-.05	.10
Political Discussion with Peers	Simple	.10	.16	-.21	.32	.11	-.20	-.34	-.02
	Partial	-.03	.08	-.26	.20	-.13	-.12	-.29	-.05
Political Disagreement with Peers	Simple	.04	.14	-.07	-.11	.13	.02	.02	.12
	Partial	-.02	.12	-.13	-.11	.08	.00	.05	.09
Political Discussion with Parents	Simple	.10	.03	-.12	.24	.11	-.20	.13	-.04
	Partial	-.02	-.15	-.10	.08	-.08	-.07	-.01	-.08
Communication with Parents	Simple	-.12	-.10	-.03	-.30	-.13	-.15	-.20	-.06
	Partial	-.14	-.23	-.11	-.26	-.11	-.15	-.17	-.07
Political Party Affiliation	Simple	-.20	.01	-.31	-.30	-.47	.24	.23	-.17
	Partial	-.20	-.04	-.40	-.28	-.16	-.03	.17	.10
Political Label	Simple	.14	-.01	.05	.57	-.10	-.10	.38	-.48
	Partial	.07	-.04	.02	.47	-.11	.19	.34	-.29
Political Interest	Simple	.17	.13	-.01	.26	.25	-.15	.08	-.04
	Partial	.11	.09	-.03	.21	.16	-.12	.09	-.21
Political Participation	Simple	.19	.22	.13	.20	.10	.04	.12	.13
	Partial	.08	.07	.16	.09	-.14	.15	.04	-.20
Expectation of Change in Future	Simple	-.28	-.14	.02	-.27	-.70	-.41	-.04	-.25
	Partial	-.22	-.14	.01	-.19	-.72	-.36	-.06	-.34
Moved to Left	Simple	-.18	.03	-.39	.16	-.13	-.26	.36	.22
	Partial	-.19	.01	-.40	.13	.01	-.31	.33	.27
Moved to Right	Simple	.04	.33	-.01	-.01	-.20	.23	.23	.10
	Partial	.06	.40	-.00	-.01	-.16	.22	.24	.12
	n=	(153)	(36)	(57)	(37)	(23)			

[a](N=153) Simple correlation is the zero-order association between Incongruency and the dependent variables. Partial correlation are these relationships controlling for 1973 levels of the dependent variables. A correlation of .17 or greater is significant at the .05 level(two-tailed test).

[b]Correlation coefficients in these four columns represent the zero-order and partial association of Incongruency and the dependent variables within the four open-closed change orientation and left-right political position categories.